

# DOE ISMS WORKSHOP BOARD GAME

## ISMS CORE FUNCTIONS

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# DOE ISMS WORKSHOP BOARD GAME

## ISMS GUIDING PRINCIPLES

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# ISMS WORKSHOP III BOARD GAME

## ISMS MISCELLANEOUS

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A worker who works in high radiation areas uses mockups to reduce radiation exposure and the potential for contamination and injury.

Which core function is primarily addressed:

- a) Senior Management Involvement
- b) Analyze Hazards and Implement Controls
- c) Establish ES&H policy
- d) Ensure that the will of the worker is considered



What **Core Function** ensures that DOE missions are translated into work by setting expectations, allocating resources, and prioritizing tasks?



Job hazard analysis, environmental impact analysis, and work planning have been performed, and proper safety and environmental controls have been implemented to prevent or mitigate the hazard.

What is the **Core Function**?



What two additional elements may be included within ISM to address guidance for an environmental management system (ISO 14001)?

- a) Define Scope of Work and Post job Review
- b) Balanced priorities and funding authorization
- c) Establishment of ES&H policy and Management Review
- d) Recounting Chads and providing Feedback and Continuous Improvement



Verifying the valve lineup in a nuclear safety class system and initiating pump operation is an example of which **Core Function**?



Performing a post Job review and sharing lessons learned from it is an example of which core function?



Several DOE sites employ processes for hazard analysis uses a computer tool or checklist to screen hazards and develop controls. Which of the following is NOT one of these tools:

- a) Fluor Hanford Automated Job Hazard Analysis (AJHA)
- b) Rocky Flats Integrated Work Control Program
- c) INEEL Hazard Identification and Mitigation System (HIM)
- d) DOE Lessons Learned Program



DOE contractors comply with the requirements of the federal, state, and local laws, and ES&H requirements and standards identified in their subcontract. At some of the DOE sites, this is accomplished through implementation of S/RIDs. For facilities without S/RIDs, ES&H requirements are established by:

- a) policy
- b) plans
- c) procedures
- d) management directives
- e) all of the above



Hazards associated with DOE work are identified, analyzed, and categorized. Results from which of the following are not used to develop, implement, and maintain controls

- a) Facility hazard analysis
- b) Environmental impact analyses
- c) Job Hazard Analysis
- d) CRADS



Various hazard and environmental impact analysis processes result in identifying and specifying the facility operational controls. The results of the facility hazard analysis are documented in the Safety Analysis Report (SAR) for nuclear facilities. The analysis for radiological and non-nuclear facilities is documented in:

- a) an Auditable Safety Analysis (ASA)
- b) a pre-job briefing
- c) a post job review
- d) occurrence reporting system



## **True or False**

A very important factor in preparing for work is to have a qualified and trained workforce to ensure that work is performed within established controls.



## **True or False**

A DOE field office and DOE contractors should have an established process to ensure that required ES&H training for each employee is identified and completed.



What item(s) is (are) required by 29CFR1910.120 for employees who may be exposed to hazardous substances?

- a) Occurrence Reporting Training
- b) Medical Monitoring
- c) Hazardous Materials Training
- d) a and b
- e) b and c
- f) a, b, and c



Readiness to perform work, including readiness to implement controls, is confirmed before starting work. Which process is used as a last confirmation of readiness before beginning work activities to ensure that the work team has an understanding of the work tasks and requirements.

- a) an Operational Readiness Review
- b) a Readiness Assessment
- c) a Pre• job briefing
- d) a Post job review



At each level of work and at every stage in the work process, feedback and continuous improvement occurs. Which of the following are **not** feedback and continuous improvement mechanisms:

- a) worker, management, and independent assessments
- b) lessons learned programs
- c) performance indicator trending analysis
- d) corrective action management
- e) performing a hazard screening on NEW work



A documented process to provide systematic identification of hazards within a given DOE operation, to describe and analyze the adequacy of the measures taken to eliminate, control, or mitigate the identified hazards, and **to analyze and evaluate potential accidents** and their associated risks is called :

- a) a ballot recount
- b) a job task analysis
- c) safety analysis
- d) none of the above



Two core functions were added to the Project Hanford ISMS description to complement the five **Core Functions** defined in DOE Policy 450.4 to incorporate EMS (ISO 14001). What are they?

- a) Establish ES&H Policy and Management Review
- b) Do Work Safely and Worker Involvement
- c) Define Scope of Work and Feedback & Improvement
- d) Enhanced Work Planning and Responsible Care
- e) VPP and Work Smart Standards



Lessons learned can be introduced into the DOE Lessons Learned System using the following processes:

- a) Occurrence Reporting and Processing System (ORPS)
- b) Non-compliance Tracking System (NTS)
- c) E-mail to a site lessons learned coordinator (SELLS member)
- d) Use of punched hole “butterfly forms”
- e) all the above



Name the **Core Function** which includes the following elements ?

- Preparing for the work
- Confirming readiness  
and
- Performing work in a safe,  
environmentally protective,  
and efficient manner



Reviewing a high voltage job  
and installing a lock to prevent  
unauthorized operations is an  
example of which **Core  
Function?**



“Five of these” form the  
framework of the DOE ISMS



Evaluating hazards and environmental impacts and developing facility-specific controls to protect the worker, the public, and the environment. Name the **Core Function.**



The Lessons Learned Process  
is an example of which **Core  
Function?**



Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated. Name the **Core Function?**



# **TRUE or FALSE**

Post-job Reviews, Safety Log Books, Safety Meetings, and Monthly Inspections are all examples of the Feedback and Continuous Improvement Core Function.



# **TRUE or FALSE**

There are only 5 Core  
Functions identified in the  
DOE Integrated Safety  
Management System.  
(DOE P 450.4)



# **TRUE or FALSE**

The core functions apply to DOE Headquarters, DOE Field Offices, and DOE contractors



# **TRUE or FALSE**

Readiness to perform work  
does not need to be confirmed.



# **TRUE or FALSE**

Job Hazard Analysis is the only effective tool or process for identifying hazards at the facility or activity level.



# TRUE or FALSE

The core functions as applied to facility maintenance and operations activities identify the major steps in a work control process.



Name the **Guiding Principle**  
that ensure that employees  
possess the experience,  
knowledge, skills, and abilities  
that are necessary to discharge  
their responsibilities.



What is the **Guiding Principle** that applies a graded approach to administrative and engineering controls based on the associated hazards of the work being performed?



What term describes workers being actively and effectively used in preparing work, including planning, hazard and environmental impact identification and analysis, implementation of controls, and readiness reviews?



Name the **Guiding Principle** that ensures that resources are allocated effectively to address ES&H, programmatic, and operational considerations.



The mechanism whereby DOE and operating contractors jointly agree to the key conditions for conducting work safely in Category 1 and 2 nuclear facilities is

- a) administrative controls
- b) authorization agreement
- c) performance agreements
- d) requirements basis



Name a phrase which describes open and effective internal and external communications which support management of ES&H issues and initiatives.

- a) hand vs. machine recounting
- b) following the rule of law
- c) exit polling and results projection
- d) communications and stakeholder involvement



## **True or False**

Senior DOE and contractor management are actively engaged in the implementation and improvement of ISMS



The major organizations that often promulgate and regulate environmental protection requirements at DOE sites are

- a. Environmental Protection Agency, DNFSB, and the NRC
- b. Starbucks, Microsoft, and Yahoo
- c. Environmental Protection Agency, US-DOE, and state agencies
- d. Congress, the US Supreme Court, and the current President of the United States



“Seven of these” are the basic attributes (values) of the ISMS



Giving appropriate  
consideration to both production  
**and** safety is an example of  
which **Guiding Principle** ?



What is the Guiding Principle?  
Employees possess the experience,  
knowledge, skills, and abilities  
that are necessary to discharge  
their responsibilities.



The conditions and requirements to be satisfied for operations to be conducted shall be clearly established and agreed-upon. What is the **Guiding Principle?**



These are attributes that when incorporated in work planning and execution help insure that work will be managed and performed in a manner that is protective of the workers, public and the environment. What are they?



Adapting safety controls to  
suit the hazards (risks) and  
complexity of a particular  
operation or activity is which  
**Guiding Principle?**



Yucca Mountain Characterization Office described how the craft are intertwined in the work control process and how this practice is a key element to a highly successful program. They suggest the eighth ISM guiding principle should be:

- a) Environmental protection
- b) Worker Involvement
- c) Stakeholder Involvement
- d) Review, check, and recount



# **TRUE or FALSE**

ISM applies only to workers in the field, and not to senior management.



# TRUE or FALSE

“Clear Roles and Responsibilities” and “Balanced Priorities” are two ISMS Guiding Principles that are not applicable to support workers or office staff.



# **TRUE or FALSE**

One major objective of an effective ISMS is to involve ES&H professionals up-front in activity level work planning.



# **TRUE or FALSE**

Brookhaven National Laboratory  
was the first of 20 DOE  
laboratories to be certified to  
ISO 14001.



# TRUE or FALSE

Involvement of the tribal nations,  
local governments, citizens, and  
other interested parties in providing  
input on ES&H issues relating to  
operations of DOE sites  
are examples of  
stakeholder involvement



# **TRUE or FALSE**

DEAR Clause 970.5204-2,  
Integration of environment,  
safety, and health into work  
planning and execution defines  
the 4 Guiding Principles



Training, experience, skills, and abilities are implementing mechanisms for:

- a. Balanced Priorities
- b. Worker Involvement
- c. Clear Roles and Responsibilities
- d. Competence Commensurate with Responsibilities



Processes for reconciling internal and external conflicts, ensuring change control, and ensuring stability in resource allocation are mechanisms for this **Guiding Principle**:

- a. Communication and Stakeholder Involvement
- b. Continuous Improvement
- c. Senior Management Involvement
- d. Balanced Priorities



Engineering controls, administrative controls, and the use of PPE should be utilized in that order to assist with job planning. These three items are all considered mechanisms for:

- a. Operations Authorization
- b. Job Hazard Analysis
- c. Hazard Controls Tailored to Work Performed
- d. Balanced Priorities



Evaluating processes, conducting assessments, post-job reviews, and correcting identified deficiencies are all examples of:

- a. Operations Authorization
- b. Continuous Improvement
- c. Hazard Controls Tailored to Work Performed
- d. Safety and Environmental Standards and Requirements Defined



Adequate assurance that the workers, public, and environment are protected from adverse conditions is achieved when properly implemented ES&H standards and requirements are established. This describes which **Guiding Principle**?

- a. Line Mgmt. Responsibility for Safety and Environmental Performance Defined
- b. Safety and Environmental Standards and Requirements Defined
- c. Clear Roles and Responsibilities Defined
- d. Senior Management Involvement



The contractor president and a pipefitter conduct an assessment of a DOE facility shop. This is an example of what:

- a. Worker Involvement
- b. Senior Management Involvement
- c. Balanced Priorities
- d. Continuous Improvement
- e. a, b, and d



Specific criteria that are developed to support the ISMS annual review are called:

- a) DEAR clauses
- b) CRADS
- c) Management expectations
- d) Continuous Core Expectations (CCEs)



Many organizations conduct their own DOE site public information activities. These organizations include the Sierra Club, Physicians for Social Responsibility, League of Women Voters, and other special interest groups. This is an example of?

- a. Worker Involvement
- b. Continuous Improvement
- c. Balanced Priorities
- d. Communication and Stakeholder Involvement



Once risk and complexity of the task have been defined, the facility history and worker experience are considered to establish a set of control and job authorization requirements. This defines which **Guiding Principle**?

- a. Senior Management Involvement
- b. Balanced Priorities
- c. Continuous Improvement
- d. Hazard Controls Tailored to Work Performed



This document assesses whether a proposed action is a major federal action that significantly affects the quality of the human environment. It serves as the basis to determine whether an environmental impact statement (EIS) is required. It is

- a) an environmental analysis and comparison report
- b) an ORPS report
- c) an environmental assessment
- d) an environmental regulatory critique



Any adverse change to the environment resulting from an organization's activities, products, or services is called an environmental

- a) change
- b) impact
- c) analysis
- d) activist
- e) stakeholder



# TRUE or FALSE

Procedures and training are common contractor mechanisms for implementing ISMS.



What date was the DOE  
Secretary expecting ISMS  
implementation at DOE sites?



DOE has issued three policies dealing with ISM:  
DOE P 450.4, DOE P 450.5 and DOE P 450.6

They are titled:

- a) *Secretarial Policy Statement, Environment, Safety, and Health*
- b) *Safety Management System Policy*
- c) *Line Management, Safety, and Health Oversight*

Which policy number is the Safety Management System Policy?



The DOE has issued two DOE Acquisition Regulations (DEAR) requirements related to ISMS. One requires the integration of environment, safety, and health into work planning and one requires execution and compliance with laws, regulations, and DOE directives.

The DEAR clauses are 48 CFR 970.5204• 78 and 48 CFR 970.5204• 2.

Which DEAR clause requires the integration of environment, safety, and health into work planning?



## **True or False**

“Line Management Responsibility for Safety” is one of the seven DOE ISM Guiding Principles.



# True or False

There is a one-to-one correlation between each of the core functions and guiding principles.



## **True or False**

Every DOE contractor has passed the ISMS verification (Phase I and Phase II) upon the initial review.



The management system that has the objective to systematically integrate safety considerations into management and work practices at all levels to accomplish missions while protecting the public, the worker, and the environment is:

- a) VPP
- b) EWP
- c) EMS
- d) Responsible Care
- e) ISMS



The waste, waste container, and any absorbent that are intended for disposal as a unit are referred to as the

- a) waste package
- b) standard disposal unit
- c) rad waste
- d) TRU waste



The safety recognition program that encourages management leadership, employee involvement, work site analysis, health and safety training, and hazard prevention and control is:

- a) Enhanced Work Planning
- b) Environmental Management System
- c) Voluntary Protection Program
- d) All of the above



# **TRUE or FALSE**

Enhanced Work Planning (EWP)  
focuses on activity level work  
control process improvements  
through an emphasis on worker  
involvement.



The ES&H initiative which is used as a mechanism to manage environmental controls and regulations and meet environmental goals (also known as ISO 14001), is

- a) EWP
- b) Responsible Care
- c) VPP
- d) EMS
- e) None of the above



# The General Chair of the Pasco National DOE ISM Workshop is Jim

- a) Johnson
- b) Gamin
- c) Tarpinian
- d) Schildknecht
- e) Stair



ES&H initiative sponsored by the Chemical Manufacturers Association which was started by the US chemical industry and promotes responsible management of chemicals is called

- a) GE Does Good Things for Life
- b) Voluntary Protection Program
- c) Passport for Success
- d) Responsible Care
- e) MSDS Program



An amount of a hazardous substance that is below the reportable quantity as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is called

- a) ALARA amount
- b) Below regulatory concern
- c) De minimis quantity
- d) Minimum detectable quantity
- e) Insignificant amount



Any person responsible for an act or process that produces dangerous waste or causes a dangerous waste to become subject to regulation is a

- a) generator
- b) polluter
- c) waste handler
- d) environmental regulator



The U.S. Department of Energy is studying this location in Nevada, to determine if it is a suitable place to build a geologic repository for the nation's commercial and defense spent nuclear fuel and high-level radioactive waste.

- a. WIPP
- b. Yucca Mountain
- c. Golden
- d. Weldon Springs



A document that prescribes a sequence of actions to be performed to achieve a desired outcome is called a:

- a. process
- b. procedure
- c. plan
- d. policy



Dangerous (hazardous) waste that also contains enough radioactivity to be classified as radioactive waste is called

- a) nasty waste
- b) mixed waste
- c) radchem waste
- d) none of the above



The use of material, processes, or practices that reduce or eliminate the creation of pollutants or wastes at the source is called:

- a) pollution prevention
- b) decontamination
- c) waste management
- d) waste disposal



The acronym CCE stands for:

- a. Critical Components and Equipment
- b. Continuous Conflict and Evaluation
- c. Continuing Core Expectations
- d. Constant Care for the Environment



To make into a whole by bringing all parts together or to unify is best described by this word:

- a. comprehensive
- b. inebriation
- c. unification
- d. integration



# **TRUE or FALSE**

According to DEAR 970.5204-78, the contractor is responsible for flowing down the necessary provisions to every subcontractor for all tiers.



# **TRUE or FALSE**

The meaning of the acronym  
ISMS is Integrated Safety  
Measurement System



# TRUE or FALSE

Periodic monitoring to ensure operability or to confirm performance adequacy is called surveillance.



## **TRUE or FALSE**

VPP and EWP initiatives contribute to ISMS implementation because they value objectives and principles that fit well with ISMS management expectations.



# **TRUE or FALSE**

Environmental Management  
System (EMS) program  
contributes to an Integrated  
Safety Management System.



# TRUE or FALSE

There are many tools used for identifying and categorizing hazards including the Safety Analysis Programs, Hazard and Accident Analysis Processes, and Job Hazard Analysis Processes.



# **TRUE or FALSE**

Procedures and training  
are common contractor  
mechanisms for  
implementing ISMS.

